

ABSTRACT

SYSTEM FOR DETECTING THE DISTRIBUTION OF FLUOROPHORES

A method for observing the presence of at least one fluorophore in a test material using a detector comprises the steps:

- 5        a) allowing incident ultraviolet light to pass through an exchangeable wavelength conversion screen comprising a scintillator which absorbs light of ultraviolet wavelengths and emits light of a narrow band width  $\lambda_{s1}$ - $\lambda_{s2}$  whereby the transmitted light has wavelength in the range  $\lambda_{s1}$  to  $\lambda_{s2}$ ;
- 10      b) allowing transmitted light to pass into the test material which comprises a fluorophore which absorbs light at an excitation wavelength around a maximum  $\lambda_{dx}$ , in which  $\lambda_{s1} < \lambda_{dx} < \lambda_{s2}$ , and emits light at a wavelength  $\lambda_{dm}$  whereby the fluorophore emits light at said wavelength  $\lambda_{dm}$ ; and
- 15      c) detecting emitted light using a detector system which is sensitive to light of wavelength  $\lambda_{dm}$ .

The scintillator is suitably thulium doped yttrium vanadate and the fluorophore is preferably fluorescein.